GUIDANCE AND SUPPORTING DOCUMENTS FOR THE FY 2003 REGIONAL AND STATE-BASED PBT PROJECTS

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PROCESS AND SELECTION CRITERIA
FOR PBT REGIONAL PROJECTS
FY 2003 Program Cycle

General Information.

Availability of FY 2003 Funds. The PBT Program is expecting to make available approximately $500 K for PBT projects sponsored b EPA Regions. These awards will be made through a national competitive process coordinated through the PBT Regional Contacts.

Matching Fund Requirements. There are no statutory matching fund requirements tied to this money. **Cost Sharing:** As final decisions are being made on which proposals to fund, those high scoring proposals where cost sharing is involved may receive greater preference. These would include cash, in-kind goods and services and third party contributions as part of the review selection.

Criteria that will be used in selecting PBT regional proposals for funding in FY2003.

Pollution prevention approaches. While it is recognized that there may be limited pollution prevention opportunities with some of the 12 PBT chemicals, where feasible, proposals including pollution prevention approaches will receive preference.

Cross-media Coordination: Proposals that clearly demonstrate coordination among program offices within and among regions will compete better than single-medium proposals. Proposals including signatures from management of more than one program office indicating this coordination will be more competitive than those that do not.

Support for the Agency-wide PBT Program: Regional proposals should clearly indicate how they directly support, or are connected to, the larger Agency-wide PBT Program. This would include advancing goals and strategies from the draft National Action Plans, or addressing cross cutting issues that support the Program as a whole, such as supporting the Hospitals for Healthy Environment (H2E) Program objectives; projects that focus on the decommissioning of PCB equipment; establishing state fish consumption advisory programs in states which do not have them; or establishing an initiative which focuses on a regulation or sector associated with significant PBT emissions, such as hazardous waste incinerators. In an attempt to help focus this criterion a bit more, we have attached the draft summaries of the chemical national action plans. Please read these summaries prior to writing your proposals. If you have a pre-proposal concept that would help to reduce PBTs but is not included as a priority in the attached National Action Plan summaries, please consult with your Regional PBT Contact for guidance.

Bias toward activities that lead to results. Regions should submit proposals that have a clear connection to environmental improvement or risk reduction especially to high risk subpopulations, which are indicated as focal points by the National Action Plans. Proposals for expanded monitoring, local or regional source identification, or information gathering should support longer-term reduction activities, such as Total Maximum Daily Load development and implementation, or targeting for State or local enforcement or outreach. Proposals must specify ways in which the Region will measure and report on the success of the activity undertaken.

Leveraging resources. Regional proposals should clearly demonstrate how they intend to leverage PBT reduction efforts at the State, Tribal, local, and community levels. Regions should establish cooperative working relationships which make best use of their respective areas of expertise and most effectively serve the reduction goals.

Engagement of stakeholders: Regions should make clear how the projects involve key stakeholders. Public education efforts, for instance, should demonstrate some participation by the communities they target in the development of the funded project.

Replicable in other parts of the region or other regions: Proposals should demonstrate how the approaches, information, or products developed are transferable to other areas throughout the country.

ADDITIONAL GUIDANCE

Eligibility: Eligible applicants for submitting proposals of funding under this program include Regional EPA offices, the 50 States, the District of Columbia, the U.S. Virgin Islands, the Commonwealth of Puerto Rico, any territory of or possession of the United States, any agency or instrumentality of a state including state universities, and all federally-recognized Native American Tribes, local governments, private universities, and private nonprofits. Private businesses and individuals are not eligible for funding, but may work with eligible entities on funded projects once funding is awarded. Proposals which demonstrate collaborations among regions or others will receive preference. All proposals received must be sent in via the regional PBT Contacts (see attached list). The one exception for eligibility is for a project that may be funded by the Office of Enforcement and Compliance Assurance (additional instructions are listed under **Criteria for Specific Project Proposals**–below). Only those qualified to receive State grant funds will be considered.

Amount of Funds to Request: Funding requests for each pre-proposal submitted should not exceed $100K. Proposals asking for leveraged partial funding for a PBT release reduction effort will also be considered. Proposals that build upon projects funded in previous year PBT Program activities should be so noted, although this is not a guarantee that the project will be funded for an additional year.

Funding Vehicles: Funds allocated under this program can be placed by the Regional Office into contracts, cooperative agreements, or grants depending upon the principal purpose of the transaction. Contracts must be used to obtain services for EPA's direct use or benefit, and may be used to provide in-kind assistance to eligible non-Federal organizations. Grants and cooperative agreements may be used to provide financial support to non-Federal organizations to help them carry out their own projects to reduce PBTs. Cooperative agreements are appropriate when EPA will be substantially involved in helping the recipient carry out its project. The use of funds in a grant or cooperative agreement must meet all the statutory requirements under TSCA and the Federal Grants and Cooperative Agreement Act.

Format of Proposals: All proposals should be no longer than 2 pages in length, be in 12 point type and include the following major items:

-- Title
– Summary Paragraph explaining overall project objective and tasks
-- Objective, Project Tasks (detail description of the tasks that will be carried out)
-- Background information
– Relation to Guidance Criteria
-- Benefits of the project
– How Project Success will be Measured
-- Deliverables (a description of the measures or activities that will be reported to reflect the effectiveness of each of the proposed tasks. In addition, the recipient shall file quarterly status reports on project progress, etc).
-- Duration of the project and the estimated completion dates
-- Funding Request (including an estimated cost of each task and total amount of funding requested. Include and matching contributions.)
-- Key Contact (address, telephone number and e-mail address)

Finalizing the Award Date: All selected projects must be awarded and funds obligated by the Regional Office no later than November 30, 2003.

Progress Reports: All funding recipients will be required to notify Headquarters when their funding vehicle is in place and supply progress reports to OPPT quarterly. These progress reports will help us ensure accountability of the PBT Program. The ***Grantrack*** software and progress report forms used by the PPIS grant process will also be used to track progress under this funding process (with some modifications, where needed). More detailed information will be provided to all funding recipients upon notification of intent to award.

Final Products: Final reports and electronic copies of all deliverables (where applicable) will be due upon completion of the funded activity. All applicable final products will be placed on the PBT Program website (http://www.epa.gov/oppt/pbt/) and the Pollution Prevention website page for P2 Grants (http://www.epa.gov/p2/grants/ppis/ppis.htm) to be accessible to all.

Compliance with the Mandatory Agency-wide Quality System as described in EPA Order 5360.1 CHG 1, 1998: If any project funded under the PBT Program is used for the collection or

use of environmental measurement data, the regional PBT Contacts should contact their regional Quality Assurance organization and EPA HQ via Paul Matthai at (202) 564-8839. In these instances, EPA Headquarters will work with the regions to assure that all quality assurance/quality control measures are taken in the collection and use of data in accordance with the Agency requirements. For more information on the Quality Assurance/Quality Control requirements, go to http://www.epa.gov/ogd/ or http://es.epa.gov/ncer/guidance/qa.html.

CRITERIA FOR SPECIFIC PROJECT PROPOSALS

Regions are encouraged to submit proposals specifically addressing the following activity:

State PBT-Focused Compliance Activities

Compliance with regulations and permit requirements is essential to ensuring that facilities properly manage PBTs and that anticipated regulatory-related PBT-reductions are occurring. States have a vital role to play in ensuring compliance. Facilities subject to existing or new PBT regulations and industries/sectors associated with potential PBT releases may benefit from focused compliance assistance, compliance incentives and/or compliance monitoring activities. Project funds are available for innovative State compliance-related initiatives or projects which can be replicated elsewhere. Routine compliance activities are not eligible for these funds.

Summary of PBTP Regional Projects Funded in Previous years: FY'99-02 (Listed by Region)

Region 1 (PBT Regional Contact: Jeri Weiss, 617 918-1568)

FY 1999

R-1.1-99 Mercury Compendium based on Strategy session of EPA, States, Tribes, Canadian Provinces and Mexico

This project compiled successful mercury reduction strategies into a database that is being share with State and Local governments as test cases for dealing with mercury problems. The database or compendium was presented at a national mercury conference in Baltimore, Maryland on March 20-21, 2000. **Funding: $35K from OPPT**

R-1.2-99 Development of Draft Mercury-in-products legislation and improving Mercury Management at Federal Facilities in New England.

Under the direction of the Conference of New England Governors, NEWMOA developed model legislation to implement coordinated labeling and manufacturer take-back programs for mercury-containing products as well as source reduction. To date, both NH and ME have used portions of the model legislation during this past legislation session. MA and VT passed mercury legislation the previous year and CT has also passed legislation. **Funding: $45K from OPPT**

FY 2000

No Grants were funded in Region 1 in FY 2000

FY 2001

R-1.1-01 Interstate Clearinghouse for Mercury Education & Reduction Program Coordination

The Northeast Waste Management Officials' Association (NEWMOA) submitted this proposal to fund the creation of the Interstate Clearinghouse for Mercury Education and Reduction Program Coordination. This clearinghouse will coordinate regulatory and public education activities for the states as they implement their programs to address mercury-containing products. Coordination includes creating a list of mercury

containing novelty items that are banned under legislation , applications for exemptions to phase-out, and materials on state mercury education and reduction legislation, policies, regulation and programs; state review of proposals for exemptions to the phase-out, alternative labeling of mercury-containing products, and collection system plans;share information and expertise on state mercury waste reduction and clean-out efforts and education and outreach programs; and promote a consistent set of reporting and application forms for implementing the notification, phase-out exemptions, alternative labeling, and collection system plans for the states that have these requirements.
Funding: $50 K of EPA funds to be matched by approximately $25 K in Interstate Clearinghouse membership fees and state and other in-kind services.
Organization: NEWMOA
Duration of project: 2 years

FY 2002

R-1.1-02 Reducing Dioxin Emissions from Uncontrolled Burning of Domestic Waste in the Northeast

NEWMOA will develop an effective dioxin emission reduction strategies based on state actions to reduce "barrel burning" of solid waste. An integral part of this strategy will be to facilitate and coordinate existing interstate workgroups to conduct a regional inventory of barrel burning, evaluate solid waste capacity and cost, and promote improved compliance with barrel burning restrictions in the Northeast states. The nexus of this strategy is an effective public outreach and education campaign that will create a public call-to-action to reduce barrel burning. NEWMOA will be coordinating this project with project # **9.1-02 Program to Reduce Dioxin Emissions from Open Burning on Tribal Lands**
Organization: NEWMOA
Funding: $75 K
Duration of project: 1 year

R-1.2-02 Preliminary Proposal for EPA FY 2002 PBT Request for Proposals Research, Education, and Technical Assistance to Support Mercury Elimination in Health Care

The primary goal of this project is to support the reduction and elimination of mercury and other PBTs in health care. The Sustainable Hospitals Project (SHP) of the University of Massachusetts Lowell will perform research, provide information, and conduct outreach about strategies to reduce and eliminate mercury. The project targets key stakeholders that can directly implement reductions in mercury use. The SHP will also leverage resources through collaborations with other regional and national mercury reduction initiatives. Through this project, information and technical assistance will be

made available to health care providers throughout the country.
Funding: **$50** K
Organization: Lowell Center for Sustainable Production/University of Massachusetts Lowell, Lowell MA
Duration of project: 1 Year

Region 2 (PBT Regional Contact: Derval Thomas , 212 637-4236)

FY 1999

R-2.1-99 Reduction of Mercury and other PBT Emissions from Scrap Metal Processing

This project, submitted by the NJDEP, will research a separation process for mercury-containing components of scrap used by secondary iron and steel manufacturing for air emission reductions. The separation process is also expected to reduce cadmium and lead containing components as well as PCB-containing components. A second component of this project will test stack emissions in aluminum smelting operations to determine if this industry has similar problems with these PBT pollutants. A report on the auto shredders and dismantler source separation process will be prepared describing the waste composition, separation guidance and recommendations. For the aluminum smelting industry, a stack test report will compare aluminum smelting to other source categories in the New Jersey mercury inventory and make recommendations based on the data.
Funding: $50 K from OPPT

FY 2000

R-2.1-00 Reducing PBTs Through Waste Incinerator Emission Control Reforms

The New York State Attorney General (AG) seeks funding to support a new staff member who will facilitate the scientific aspects of the AG's involvement with permitting and compliance activities to ensure demonstrable and reliable compliance with MACT rules for hazardous waste incinerators and light-weight aggregate facilities burning hazardous wastes. This professional will guide a major project which will seek adoption at incinerators of 1) continuous or quasi-continuous monitoring (CEMs) for selected persistent, bioaccumulative and toxic (PBT) species (mercury, dioxins/furans, benzopyrenes, PCBs) where feasible, 2) pretreatment of liquid wastes, and 3) enhancements to waste characterization and minimization..
Funding: $53.8 K from OECA

R-2.2-00 (Joint project between REGIONS 2 and 3)
Delaware Estuary Early Action: Municipal STP PCB Source

Trackdown & Load Reduction Pilot

The objective of the project is to trackdown and eliminate sources of PCBs entering the Philadelphia and Camden municipal sewer systems. Municipal point sources have been identified as a significant PCB load to the Delaware Estuary, contributing to the existing fish consumption advisories. The project will be implemented as part of a more comprehensive PCB Strategy for the Estuary. EPA Regions 2 and 3, the States of NJ, DE. and PA. and the Cities of Philadelphia and Camden will be working in partnership to implement the project.
Funding: **$100K ($75K from OECA, $25K from OPPT)**

FY 2001

No Grants were funded in Region 2 in FY 2001

FY 2002

R-2.1-02 Region 2 Outreach to Utility Customers Encouraging Voluntary Phaseout of PCB Equipment

The goal of this project is to encourage the early, voluntary phaseout of PCBs, which continue to be authorized by the Toxic Substances Control Act (1976) for use in electrical equipment. This would be accomplished through outreach targeted specifically to electric utility customers who own transformers, with an emphasis on reaching owners who did not register PCB Transformers with EPA. The project would include the development of outreach materials, distribution of materials in conjunction with one or more utilities, collection of response information, development of a project report, and evaluation of project success and lessons learned. Outreach which encourages phaseout of equipment and is targeted directly to owners of transformers has not been done previously.
Funding: **$25 K**
Organization: Region 2
Duration of project: 2 Years

Region 3 (PBT Regional Contact: Marie Holman 215 814-5463)

FY 1999

No Grants were funded in Region 3 in FY 1999

FY 2000

No Grants were funded in Region 3 in FY 2000

FY 2001

No Grants were funded in Region 3 in FY 2001

FY 2002

R-3.4-02 Identification and Assessment of Non-point Sources of PCBs in the Delaware Estuary – JOINT PROPOSAL COVERING R-2 & 3

This project will develop information that is essential for addressing non- point sources

Region 4 (PBT Regional Contact: Dan Ahern, 404 562-9028)

FY 1999

R-4.1-99 Environmental Benefits Realized Following Removal of a Significant Local Atmospheric Mercury Emission Source

This grant has provided the North Carolina's Division of Air Quality the ability to monitor down-wind changes in environmental mercury levels resulting from converting the local Chlor-alkali plant from a mercury cell to a non-mercury cell process. The addition of this monitoring station has been incorporated into a larger monitoring network to evaluate the environmental presence of mercury since the plant conversion to a non-mercury process last summer. **Funding: $47 K from OPPT**

FY 2000

R-4.1-00 Mercury in Coastal Regions of the Southeastern US: Defining the contribution of global sources

The Atlantic and Gulf Coastal Plain regions of the US are affected with unusual severity by the problem of excessive levels of mercury in fish (principally largemouth bass in this region, a very popular sport fish). Once thought to be a problem restricted to higher latitudes, the finding of very high levels of mercury in Everglades' bass in 1989 was subsequently discovered to affect the entire Southeast as well a most states. The objective of this proposal is to develop additional information about the sources of mercury to water bodies in the area in order to define the benefits of policies of control mercury emissions within the Southeast. The crux of the proposal is to do some focused research on atmospheric chemistry which is needed very soon to inform the models and the important "debate" about how important is mercury loading via cross-ocean transport, vs. the local sources.
Funding: $50K from OPPT

FY 2001

R-4.1-01 Reduction in Mercury Contamination in Schools

The Waste Reduction and Technology Transfer (WRATT) Foundation proposes to identify typical sources of mercury contamination in Alabama's 1,500 K-12 schools. Although schools do not constitute one of the largest sources of mercury to the environment, they are places where mercury and children may come together. The toxicity of mercury to children is well documented. Most high schools and middle schools have had one or more mercury spills—elemental mercury, thermometers,

manometers, or barometers. Moreover, because of the widespread use of lamps containing mercury, proper handling practices may not be observed in many schools. This is especially true for broken lamps and cleanup practices.

Project objectives and tasks are as follows:

A. Education—Develop a mercury awareness bulletin for school superintendents and principals. Communicate project findings and recommendations to other schools.

B. Identification of contaminated areas—Conduct site assessments of a cross section of schools based on age, type of construction, type of lighting systems, and use of laboratories.

C. Training—Develop proper handling, cleanup, storage, and disposal procedures for science teachers, maintenance persons, custodians and others who come in contact with mercury.

Funding: $35 K.

Organization: The Waste Reduction and Technology Transfer Foundation (WRATT)

Duration of Project: 1 year

R-4.2-01 Determine if Uncontrolled, Active Polycholrinated Biphenyl (PCB) Sources are Significant Contributors to Identified PCB-Impacted Water Bodies in the Southeast.

This will be a multi-step effort beginning on a broad scale and narrowing to focus on selected water bodies/drainage basins and targeted suspect sources. First, PAB using Geographic Information Systems (GIS) data bases and tools will prepare graphic displays of water bodies that have high PCB concentrations in sediments and established PCB-fish consumption advisories in Region 4. Next, PTSB staff using industry directories and published reports will locate facilities that may have used or discarded large volumes of PCB fluids on-site including: former PCB electrical equipment manufacturing facilities; former PCB electrical equipment repair facilities; pre-1971 manufacturers of hydraulic or heat transfer equipment; and high volume/high concentration PCB-use sites (e.g., utilities, paper mills, steel mills). Then, the location of suspect PCB sources will be plotted on maps and compared to the maps of PCB-impacted water bodies. Where there appears to be significant correlation between suspect PCB source locations and PCB-impacted water bodies, PTSB staff will conduct a sampling reconnaissance and/or PCB site inspection to assess PCB contamination in environmental media at the targeted site(s). Up to five suspect sources will be targeted for investigation. The final step will be to examine the results and assess success/failure rate.

Funding: $15 K

Organization: Region 4 EPA Pesticides and Toxic Substances Branch (PTSB) and Office of Policy and Management's Planning and Analysis Branch (PAB)

Duration of Project: 7 Months

FY 2002

No Grants were funded in Region 4 in FY 2002

Region 5 (PBT Regional Contact: Seth Dibblee, 312 886-5992)

FY 1999

R-5.1-99 Regional Burn Barrel Campaign

According to recent studies conducted by ORD, the practice of barrel burning continues to be a significant source of dioxin/furan emissions. This grant is focuses on the Western Lake Superior Sanitary District area and entails working with a regional collaborative group to develop tools and educational material to help communities understand why it is important to reduce garbage burning to reduce the introduction of PBT chemicals into the environment. Upon completion, this information can then be shared nationwide.
Funding: $70 K from OPPT

R-5.2-99 Sector-based Pollution Prevention (This project has been funded in FY 1999 and 2000)

Under this grant, the Delta Institute has created a partnership with the Council of Industrial Boiler Owners to develop ways to increase energy efficiency and reduce toxic chemical use and discharge. This effort, in collaboration with the Department of Energy, is exploring ways to reduce the emission of cadmium, PCBs, Dioxins/furans and Hexachlorobenzene from combustion sources. This project has been co-funded by the Office of Reinvention under its Sector-based program.
Funding: $70 K ($60 K from OPPT and $10K from OPEI)

FY 2000

R-5.1-00 Toxic Reductions from Energy Efficiency Among Industrial Boilers

The Delta Institute proposes to coordinate and facilitate Phase II of a GLNPO funded project Sector-Based Pollution Prevention: Toxic Reduction through Energy Efficiency and Conservation Among Industrial Boilers (GL99182). The project is a partnership with the Council of Industrial Boiler Owners and State of Wisconsin agencies. The goal of the project is to establish cooperative agreements with the State of Wisconsin and a trade association - or a cluster of its members - to achieve emission reductions of BNS Level I

and Level II pollutants through the implementation of selected energy efficiency technologies and methods. The anticipated agreements will serve as models for other state energy and air regulators and the BNS Integration Workgroup. And while the agreements will initially focus on energy related emissions, they will also commit to broader efforts that will eventually address pollutants generated from industrial and commercial activities from a broad range of source sectors.
Funding: **$100K Total (45K from OPPT, 55K from GLNPO)**

R-5.2-00 Utility/Taconite Industry Mercury Workshop in Minnesota

EPA funding from the PBT initiative would be used to pay for travel, expenses, planning, and implementation of one or two (depending partly on funding) workshops for electric generating facilities and taconite facilities in Minnesota. The workshops would be focused on helping these companies find, label, and manage disposal or recycling of mercury in industrial switches and other industrial devices. Other industries could attend, but the focus would be on electric generators and taconite plants. Possibly, one workshop could be designed primarily for utilities and one for the taconite facilities, although the workshops might be more efficiently combined. Minnesota could also invite representatives from similar facilities in Wisconsin to participate since travel distance would not be large. With sufficient funds, the workshop(s) would include a prioritization of which equipment to focus on first, an evaluation of mercury-free alternatives, and an initial assessment of the actual mercury release reductions associated with removal and proper management of different mercury containing devices.
Funding: **12K from OPPT**

R-5.3-00 PCB Phase-out at Federal Facilities

The Federal government, including the Departments of Defense, Energy, and Transportation, is one of the single largest remaining users of high concentration PCBs in transformers. Consequently, the Federal government has, within its own power, the ability to reduce more PCBs than any other single owner of PCB transformers. To accomplish this, however, a coordinated and focused effort will be needed. This project will involve funding a senior environmental employee to support EPA staff on the development and implementation of a program to reduce the amount of Federal government owned PCBs. Actual activities conducted by the senior environmental employee would include: conducting a more accurate accounting at the department, agency and facility level of what the Federal government owns and/or operates; developing an approach that will result in the departments and agencies removing their PCBs; following through with implementation of the developed approach; measuring and tracking progress; reporting results; and making the necessary contacts and arrangements

to complete all of the preceding tasks.
Funding: 50K from OPPT

R-5.4-00 Mercury Conference for ECOS Commissioners

On October 4, 1999 the Environmental Council of States (ECOS) approved a recommendation by its Air and Water Committees to sponsor a national conference on mercury. ECOS is the national association of state and territorial environmental commissioners. The conference is intended to bring all stakeholders in the mercury issue together so that the commissioners can learn and hear various sides of the issue. The conference agenda, currently being planned by ECOS, 20 state agencies, EPA, NRDC, and STAPPA staff would be aimed at educating and informing Commissioners and upper level agency managers and would look at issues such as: the science and impact of mercury emissions, existing and emerging technologies, industry perspectives on control, international actions and provide a forum to exchange what states are currently doing.
Funding: **$37.7K from OPPT**

R-5.5-00 PBT-free Purchasing in the Great Lakes States

INFORM's project, PBT-free Purchasing in the Great Lakes States, would focus on working directly with government agencies and institutions at the state level to minimize their procurement of products that contain select high-priority persistent, bio-accumulative toxins (PBTs) identified in the Great Lakes Binational Toxics Strategy (BNS) and by the U.S. Environmental Protection Agency (EPA). INFORM is targeting heavy metals -- primarily mercury and lead -- because they are a high priority for the region and are still used extensively in manufacturing processes. INFORM will also include other heavy metals from EPA's Draft RCRA PBT list, such as cadmium, beryllium, arsenic and copper, that are found in products that are used extensively and have a high potential to adversely affect the Great Lakes. This initiative is part of a larger, multi-year Purchasing for Pollution Prevention project recently launched by INFORM, which currently involves several states in the Northeast. INFORM seeks funding to expand this project through aggressive education and outreach in the eight Great Lakes states.
Funding: **$66.4K from GLNPO**

R-5.3-01 Developing and Testing the Tools to Implement Burn Barrel Reduction Campaigns (to reduce dioxin emissions)

The proposal envisions a three-pronged approach to reduce the practice of backyard trash burning (hereafter referred to as "burn barrels"). Given the nature of the burn barrel phenomenon, the strategy focuses on the ways and means of changing the behavior of individuals. Three elements have been found that will influence a person's decision to burn their wastes on-site or manage them in a more appropriate manner: **education**, **infrastructure**, and **enforcement**. All three elements will be needed for effective implementation of the strategy. It is necessary to first raise awareness about the burn barrel problem to effect behavioral change. Without attitudinal change, the development of additional infrastructure or the imposition of regulations that ban the burning of garbage will fail to address the needed behavioral change. Conversely without viable alternatives to burning, people will be unable or unwilling to change their behavior. Funding is being requested to help develop generic reduction strategies and tools that can easily be transferred to other jurisdictions. The geographic scope for this proposal is northern Wisconsin and Minnesota. It is anticipated that the generic materials would be adopted by the other states around the Great Lakes Basin, as well as Canada. The proposal leverages the work conducted by WLSSD under a previous GLNPO grant. WLSSD will continue to contribute employee time by delivering a wider regional campaign. Environment Canada is expected to devote resources to a project that is coordinated with the activities outlined in this proposal, in order to test and deliver regional campaigns in the province of Ontario, initially focused in the Lake Superior basin. State, Tribal, county and other local partners will be sought to help deliver portions of the proposal.

Funding: $55 K
Organization: Western Lake Superior Sanitary District (WLSSD)
Duration of Project: 1 year

R-5.4-01 PCB Phase-out at Federal Facilities (continue efforts started in FY2000)

The Federal government, including the Departments of Defense, Energy, and Transportation, is the single largest remaining user of high concentration PCBs in transformers. Consequently, the Federal government has the ability to reduce more PCBs than any other owner of PCB transformers. In FY 2000, Region 5 started a project, funded under the PBT initiative, to reduce the amount of Federal government owned PCBs. This proposal for FY 2001 is to continue and expand the outreach component of the project started in FY 2000 by funding a senior environmental employee to support EPA staff in developing informational material and assuring widespread distribution of

material to Federal facilities. Some funds may also be used for contract support for distribution of informational material. Deliverables will include informational material such as a brochure or fact sheet with information on identifying PCB equipment, why facilities should phase out their PCBs, applicability of Executive Order 13148, PCB disposal requirements, and PCB disposal facilities.
Funding: $25 K (to fund a senior environmental employee)
Organization: Region 5
Duration of Project: 1 year

R-5.10-01 Tribal Assessment of Dioxin Levels in Lake Superior Fish

The Great Lakes Indian Fish and Wildlife Commission (GLIFWC) will determine dioxin levels in composite samples of lake trout, whitefish, herring, sturgeon, and siscowet trout for the purposes of environmental risk reduction, identifying dioxin monitoring potentials of various Lake Superior fish species as bio-indicators, and determining if and the extent dioxin levels in various fish species can be reduced by trimming fat from fish.
Tasks - Under this proposal, GLIFWC will test 44 archived composite samples of five species of Lake Superior fish; integrate dioxin testing results into GLIFWC's data bases; analyze data using statistical programs; and publish findings and conclusions for peer review. Information regarding dioxin levels in Lake Superior fish will also be disseminated through professional conferences (SETAC, NAFWS, NABS), Binational Program committees, GLIFWC's web site (www.glifwc.org), Masinaigan intertribal newsletter, and GLIFWC's ongoing ATSDR workshops with tribal fishermen and health department staff.
Funding: $52 K
Organization: The Great Lakes Indian Fish and Wildlife Commission
Duration of Project: 1 year

R-5.13-01 PCB Risk Communication and Outreach Project

One of the key areas in which there is a need for improved risk communication and community outreach with regard to PCBs centers on fish consumption as the major pathway for on-going exposure to PCBs in Chicago-area communities who rely on subsistence fishing as a major food source. These communities are less likely than sports fishermen to purchase fishing licenses, and therefore have less opportunity to be reached by the fish advisories and other communication materials focused on reducing risks to PCB exposure from regular fish consumption. Additional barriers in some of these communities are presented by low literacy in English or non-literacy in communities which are not primarily English-speaking. One of the greatest barriers is the lack of other alternatives as sources of high protein which are free and as readily accessible as fishing from local piers and harbors. To address this need, the University of Illinois-Chicago School of Public Health (UIC SPH) proposes to develop a model risk communication and

outreach program based upon other successful peer-centered, community outreach programs established at UIC SPH.
Funding: $50 K
Organization: University of Illinois-Chicago School of Public Health
Duration of Project: 2 years

FY 2002

R-5.4-02 PCB Risk Communication and Outreach Project (2002-2003)

The PCB Risk Communication and Outreach Project (PCB RCOP) will specifically address the goals of U.S. EPA's PBT efforts to reduce dietary exposure from fish consumption by assuring that information about the health risks from eating PCB-contaminated fish caught in Lake Michigan reaches historically under served target populations, specifically recreational and subsistence fishers (as distinct from traditional sports fisherman), and the women and children who eat their catch. The project will develop a model for improving risk communication in hard-to-reach populations, particularly immigrant and low income communities in urban settings, and will further inform US EPA's efforts in this area. In its first year, with current funding from the PBT program in Region V, the project has already established a collaborative relationship with several community organizations in the Asian, Ethiopian, East European, and Hispanic community in the Uptown neighborhood of Chicago. The tasks in the second year of this project will be to consolidate progress made in the existing survey outreach project into an ongoing risk communication mechanism, expand the scope of risk communication to include mercury risks, develop a permanent risk intervention mechanism based in the Mutual Aid Association's Women's Health Education Project, and continue to work collaboratively with the relevant community organizations on these efforts to develop a model which can be generalized to other similar communities.
Funding: $66,794
Organization: UIC SPH Great Lakes Centers
Duration of project: 1 Year

R-5.5-02 Promoting Elimination of Persistent Bioaccumulative Toxic Substances through Small Publicly Owned Treatment Works (POTWs)

This project will promote elimination of PBT contributions to the environment through education, outreach and technical assistance provided to small communities in a large

geographical area of Wisconsin by working with their POTWs. **Objectives and Project Tasks:** 1) Market the project through existing state resources and partnerships with small POTW communities. Gain commitments from the community or treatment plant that they will host or attend training workshops, assist in disseminating specific PBT and pollution prevention information in their community and promote on-site technical assistance. 2) Principal will organize and conduct the training programs in the communities selected for project participation. The workshops will include identification and education, concerning PBT issues and provide the basic principles and elements of a POTW pollution prevention program. 3) Principal will conduct on-site pollution prevention opportunity assessments of local dischargers identified by the small POTW as being significant either by volume, toxicity or as a potential PBT discharge source. Assessments would take place by voluntary invitation of a facility or while accompanying POTW staff during their inspections.

Funding: $52,658

Organization: University of Wisconsin Stevens Point, W-Extension, Solid & Hazardous Waste Education Center (SHWEC)

Duration of project: 1 Year

R-5.6-02 National Voluntary PCB Equipment Phaseout

The overall objective of this project is to reduce the amount of PCBs in the environment and which may be released to the environment by promoting the early voluntary phaseout of PCB electrical equipment in the nation. This project will involve funding contract support to assist EPA staff on implementing a national effort seeking the reduction of PCBs still in use. Activities conducted will include: finalizing and distributing material to owners of PCBs seeking the phase out of their PCBs, following up with the companies and associations to which material was sent; attending up to 5 national industry conferences; investigating the amount of PCBs remaining in use; and tracking responses and progress. These activities will be conducted at the national level, coordinated between the Regional and EPA HQ offices, expanding voluntary PCB equipment decommissioning efforts already begun.

Funding: $85 K

Organization: Tony Martig, Region 5

Duration of project: 1 Year

R-5.7-02 PCB Phaseout at Federal Facilities 2002 (continue efforts started in FY2000)

The Federal government, including the Departments of Defense, Energy, and Transportation, is the single largest remaining user of high concentration PCBs in transformers. Consequently, the Federal government has the ability to reduce more PCBs

than any other owner of PCB transformers. In FY 2000, Region 5 started a project, funded under the PBT initiative, to reduce the amount of Federal government owned PCBs. This proposal for FY 2002 is to continue the project by funding a senior environmental employee to support EPA staff in contacting Federal facilities, compiling and tracking information and preparing a final report. **Objective, Project Tasks**: The overall objective of this project is to reduce the amount of PCBs in the environment and which may be released to the environment by promoting the early voluntary phaseout of PCB electrical equipment at Federal facilities. The project, started in FY 2000, involves approaching Federal facilities through the heads of their departments to seek the removal of their PCB equipment. It will be coordinated with outreach efforts for Executive Order 13148, Greening the Government Through Leadership in Environmental Management.
Funding: $25 K
Organization: Region 5 (Tony Martig)
Duration of project: 1 Year

Region 6 (PBT Regional Contact: Ruben Casso, 214 665-6763)

FY 1999

No Grants were funded in Region 6 in FY 1999

FY 2000

No Grants were funded in Region 6 in FY 2000

FY 2001

R-6.1-01 Reduction of Mercury Exposure to Vulnerable Population of Children In Communities Along the Texas-Mexico Border

The goal of this pilot project is to identify, collect and dispose of elementary mercury sources in Independent School Districts along the Texas-Mexico border area. We propose to assist the school districts with replacement and disposal costs associated with elemental mercury removal. Independent school districts along the Texas/Mexico border will conduct an inventory of all forms of elementary mercury at each campus building in the their respective district. After conducting inventories, all sources of elementary mercury would be collected and disposed of according to existing contracts held by the school districts. EPA will assist the Independent School Districts with reimbursement costs for mercury-containing materials collected. Further, EPA will assist the

Independent School Districts in meeting financial obligations associated with the disposal of mercury-contaminated materials. With approved proposal, EPA would assist science departments with purchase of educational videos on metals chemistry to replace actual elemental mercury sources. Specifically, collection and dispose of elemental mercury sources will be performed at the Roma Independent School District (ISD), Rio Grande City ISD, and other sister school districts along the Texas-Mexico border area. Elemental mercury collection and disposal includes elemental mercury in science classrooms, mercury thermometers and mercury barometers. *Under review - In addition to the school collection, EPA Region 6 and the Roma Independent School District are currently investigating the feasibility of conducting local collection events in coordination with the school district's Parents Advisory Council (PAC). This program may be expanded to include other ISDs.* The proposal will leverage the efforts and resources of the local ISDs. The publicity and success of the PBT efforts may lead to future removals. The Children's Health Program has offered $5,000 in support for this project. Additional cost sharing from US/Mexico Border Program funds is being solicited, but has not yet been confirmed.

Funding: $50 K

Organization: Roma Independent School District (ISD), Rio Grande City ISD, and R-6

Duration of Project: 9 Months

FY 2002

R-6.4-02 Intervention Proposal from the Louisiana Department of Environmental Quality EPA's Persistent, Bioaccumulative and Toxic Chemicals (PBT) Program

Statewide Mercury Sweep: This will be an intervention, education and outreach program designed to reduce mercury releases, reduce mercury exposure, reduce mercury use, and assure safe storage and safe recycling or disposal. Louisiana proposes to target unregulated mercury sources. This project will support information and education efforts for the existing Louisiana Mercury Task Forces, provide funding to local household hazardous waste collection project for mercury "clean sweeps" that collect and properly dispose of household mercury; provided local government with workshops on mercury pretreatment programs for sewage treatment districts. The DEQ Small Business Program will conduct an outreach effort to encourage heating, ventilation, and air conditioning contractors and suppliers to promote the use of non-mercury thermostats and to properly dispose of mercury thermostats that they replace. The Department will undertake an information and education program in cooperation with the Louisiana Hospitals Association for hospitals and other medical care facilities on avoiding or limiting the use of mercury-containing products and to properly manage the disposal of existing mercury. Workshops and training materials will be developed and implemented for commercial and industrial sectors using mercury-containing devices. Targeted will be hospitals,

medical facilities, laboratories and dental facilities using mercury and mercury containing products. The automotive salvage industry and metal scrap yards will be provided information on the recovery of metallic mercury switched from scrap automobiles.
Funding: $ 25 K
Organization: Louisiana Mercury Task Forces
Duration of project: Unspecified (Assuming 1 Year)

Region 7 (PBT Regional Contact: John Helvig, 913 551-7018)

FY 1999

No Grants were funded in Region 7 in FY 1999

FY 2000

R-7.1-00 MPCA-TAP Cooperative Banned Pesticide Disposal Project

The Missouri Department of Natural Resources' Technical Assistance Program (TAP) is working with the Missouri Pest Control Association (MPCA) to help businesses and farms remove persistent bioaccumulative pesticides from storage rooms, sheds and barns and properly dispose of them. Preliminary planning for collection locations and logistics of choosing a disposal facility and means of transportation to the facility are underway. The initial one day collection date is planned for either very late fall 2000 or early spring 2001. A mailing by MPCA will notify all structural and termite pest control businesses including non- association members of the collection and will require making a reservation to participate. MPCA and TAP will contact University of Missouri Extension so that they can notify cotton farmers to make reservations for the collection. Missouri has adopted the Universal Waste rule for pesticides and the collection will be operated following the rule. All PBT pesticides will be included in the collection. MPCA representatives will man the collection sites and will keep records of the amount and type of collected pesticides and sources. All planning and collection site labor by MPCA and TAP will be donated and the only grant fund cost will be for paying the disposal company for their collection, transportation and disposal charges.
Funding: 50K from OPP

FY 2001

No Grants were funded in Region 7 in FY 2001

FY 2002

No Grants were funded in Region 7 in FY 2002

Region 8 (PBT Regional Contact: Matt Langenfeld, 303 312-6284)

FY 1999

No Grants were funded in Region 8 in FY 1999

FY 2000

No Grants were funded in Region 8 in FY 2000

FY 2001

R-8.6-01 Voluntary National PCB Equipment Phase Out in the Mining Industry

The overall objective of this project is to reduce the amount of PCBs in the environment and which may be released to the environment by promoting the early voluntary phase out of PCB electrical equipment. To accomplish this at a national level, a coordinated effort will be needed. This project will involve funding for contract support to support EPA staff on the implementation of national effort to reduce the amount of PCBs still owned and operated in the mining industry. This is especially important because the mining industry, along with the associated loading facilities, mills, and smelters are known to have high power requirements and therefore to use PCB electrical equipment. PCBs abandoned in underground mines are especially hazardous to the environment because they can be expected to become an irretrievable threat to groundwater. Because of the perception that mines are dangerous, most regions have exempted both the underground and surface mining industry from enforcement inspections along and the associated educational benefits. Activities conducted will include: identifying the owners of PCBs, preparing outreach material which describes the benefits of accelerated decommissioning, distributing the outreach material to the owners of PCBs, and tracking responses and progress. These activities will be conducted, as possible, at a national

level, and coordinated between the Regional and National PCB programs, expanding voluntary PCB equipment decommissioning efforts already begun. Resources are leveraged in this project since it will involve outreach efforts at the national level, using national trade associations as appropriate and applicable.
Funding: $25 K
Organization: Region 8
Duration of Project: 2 years

FY 2002

R-8.3-02 Development of Pollution Prevention and Waste Minimization Profiles Emphasizing PBT Chemical Reductions for Petroleum Refineries

Since petroleum refineries rank among the top ten (10) facilities for Toxics Release Inventory (TRI) emissions and hazardous waste generation in most of the states of Region 8, the Wyoming Department of Environmental Quality (WDEQ) is proposing to document nine (9) pollution prevention (P2) and waste minimization (WM) projects emphasizing persistent, bioaccumulative, and toxic (PBT) chemical reductions that refineries could implement. Particular interest will be placed on avoiding transfer of pollutants from one medium to another, and "life cycle" analysis of P2/WM initiatives to assure they have a significant net environmental benefit. The benefits from this project include a renewed and updated awareness of refinery P2/WM initiatives, as well as improved insight into refinery P2/WM issues among regulatory personnel for use during inspections, compliance assistance, and planning of settlements involving Supplemental Environmental Projects (SEPs). Upon completion, this information can be shared nationwide as a valuable resource for the petroleum refining sector and agency personnel.
Funding: $50 K (with Cost sharing by WDEQ would be limited to matching labor and overhead, estimated to be valued at $20,000)
Organization: State of Wyoming of Environmental Quality
Duration of project: 1 Year

Region 9 **(PBT Regional Contact: John Katz, 415 972-3283)**

FY 1999

No Grants were funded in Region 9 in FY 1999

FY 2000

1. Air Monitoring For Dioxins in the San Francisco Bay Area

This project seeks $100,000 of PBTI funds to support ambient air monitoring to characterize average air dioxin concentrations in the Bay Area. This monitoring effort is a key component of a comprehensive, multi-media dioxins reduction and outreach effort for the Bay Area, and will also contribute necessary data on urban areas to the national dioxins monitoring project. In addition to addressing a problem of major concern to Bay Area governments and communities, this effort represents a model for engaging state and local governments and the public on the emerging dioxin issue; and for implementing an area-wide P2 effort for dioxins. EPA funding is critical to leveraging more than $350,000 in state and local funds.
Funding: **$100K from OPPT**

FY 2001

R-9.1-01 Mercury Emissions From Hard Rock Mining

This grant will establish a National Atmospheric Deposition Network/Mercury Deposition Network (NADP/MDN) mercury monitoring site in western Nevada to identify "background" ambient mercury concentrations. Data would be compared to findings from monitors "downwind" of gold mines that are a major source of airborne mercury. This would complement the current NADP/MDN site in eastern NV funded by OAQPS and Region 9. Phase 1 of the project involves geological study, mapping, and field sampling to identify the best reference (i.e. no impact other than global sources) site in Northwest NV. Phase 2 involves installing the mercury collector and monitoring the site for two years. Results from the monitoring will be used to bolster potential regulatory and non-regulatory activities with the mining industry.
Funding: $84.5 K
Organization: USEPA ORD NERL/Region 9
Duration of Project: 3 years

R-9.2-01 Air Monitoring for Dioxins in the San Francisco Bay Area

This project intends to utilize PBTI funds to support further ambient monitoring and data analysis for dioxin and dioxin-like compounds in air in the San Francisco Bay Area. The current year's efforts have led to development of an ambient monitoring network which operates on the NDAMN protocol with an enhanced schedule. The network, including those affiliated stations sponsored by the California Air Resources Board (ARB), will consist of up to a total of 7 stations throughout the Bay Area measuring dioxins using the

NDAMN protocol. The additional funding will allow the continued operation of the NDAMN-protocol sites through 2002, extension of the monitoring work to investigate alternative, less labor-intensive operations (an intercomparison of the National protocol with the "Connecticut Protocol", including brushless motors), directional monitoring (with winds from a specific direction only) at selected sites, and data analysis (site-to-site comparison within the Bay Area and as compared to national stations). The PBT funding continues to be crucial for leveraging other programs interest and participation. BAAQMD and ARB are providing additional funds for the continued maintenance or establishment of stations, sample collection and analysis of additional sites (estimated $150,000 in matching funds).

Funding: $50 K
Organization: Region 9
Duration of Project: 2 years

R-9.4-01 San Francisco Bay Fish Consumption Education and Outreach Taskforce

The objective of this proposal is to provide culturally appropriate information to at-risk fishing communities in the San Francisco Bay Area regarding health risks of consuming more Bay fish than advised by the California Office of Environmental Health Hazard Assessment's (OEHHA) 1994 interim fish advisory. The goal of the project will be to change the fishing habits and fish preparation by anglers who consume Bay fish, thereby reducing their risk of chemical contamination, notably mercury, dioxins, and PCBs. To reach the target communities, the participating agencies will convene a task force composed of culturally diverse community based organizations (CBO's) and state, federal and local environmental and health agencies. The task force will develop an education and outreach program for at-risk fishing communities. We will then recruit the CBOs to develop and deliver the products and messages for their communities. This approach can serve as a model for similar risk communication efforts nationally.

Funding: $25 K (with in-kind contribution of $16,120
Organization: California Dept. of Health Services
Duration of Project: 1 year

FY 2002

R-9.1-02 Program to Reduce Dioxin Emissions from Open Burning on Tribal Lands

Open burning of household trash in burn dumps and backyard barrels is widespread in Indian Country. It is also a severe environmental hazard, representing the largest uncontrolled source of dioxin emissions, and a significant source of particulates and other air toxics. This project will develop and implement an outreach program to reduce open burning in Indian Country. The Region 9 Pollution Prevention and Solid Waste Office will work with at least two interested tribes to develop appropriate information, messages, materials, and strategies to reach residents of tribal lands. We will partner with the San Pasqual Band of Diegueno Mission Indians of California and one other tribe to conduct a baseline survey, develop and implement culturally relevant strategies to reduce burning, pilot the outreach program, measure results, and replicate the approach Regionally and nationally. We also will work with interested states to apply any lessons learned to backyard burning in rural areas.
Funding: $50 K
Organization: Region 9 Pollution Prevention and Solid Waste Office
Duration of project: 2 Years

R-9.4-02 Voluntary Phase down of PCBs: Regional Implementation of a Program for Decommissioning PCB-Containing Operating Electrical Equipment

This project will develop and implement a regional program to promote accelerated removal of PCB-containing electrical equipment (PCB equipment) by encouraging voluntary decommissioning. Region 9 and the California Department of Toxic Substances Control (DTSC) propose to develop, initiate and implement this program in California using a creative partnership approach. Proposed activities include: designing a voluntary decommissioning program in partnership with government, the utility industry, and other appropriate stakeholders; and providing outreach and assistance to facilities within a utility company's service area who own PCB equipment. The next step within the region will be to expand the program to the other Region 9 states. **Objective, Project Tasks-**to promote early and voluntary phase out of PCB equipment. The tasks proposed to meet this objective include:
1. Develop voluntary program with California utility companies.
2. Provide outreach to, and compliance assistance for, companies within a utility company's service area who actually own the PCB equipment (transformers, capacitors, switches, etc.).

Funding: $50 K
Organization: Region 9, Cross Media Division

Duration of project: 18 Months

R-9.6-02 Air Monitoring for Dioxins in the San Francisco Bay Area (SFBA)

This project will use PBT funds to support further ambient monitoring and data analysis for dioxin and dioxin-like compounds in air in the SFBA. The past year's efforts have led to development of a six-station ambient monitoring network. Five samplers in the east and south Bay Areas operate on the NDAMN protocol with an enhanced schedule. These samplers are managed by the California Air Resources Board (CARB) as part of the California Ambient Dioxin Air Monitoring Program (CADAMP) with field support provided by the Bay Area Air Quality Management District (BAAQMD). A sixth sampler in the north Bay Area is operated by BAAQMD under the NDAMN program. Operation of the only dioxin sampler in the San Francisco/peninsula region was terminated when CARB elected not to include the site in the CADAMP program begun in December 2001**. Objective and Project Tasks:** This project proposes to enhance the existing dioxin monitoring network in the SFBA through the operation of a dioxin sampler at the BAAQMD San Francisco ambient air monitoring station. Existing CADAMP dioxin samplers are located in heavily populated areas of the east and south regions of the SFBA downwind of the Bay and industrial areas. The San Francisco site is also in a heavily urbanized setting, but is upwind of the Bay and receives far more ventilation from the Pacific Ocean. San Francisco sampling will enhance our understanding of the exposure gradients and accumulation of dioxin-like compounds across the heavily populated SFBA and provide exposure data for the coastal/western region. The San Francisco air monitoring station is already equipped with a dioxin sampler purchased with funds provided under a previous PBT grant. The CADAMP program has engaged the services of an analysis laboratory and formulated operating and QA procedures. BAAQMD intends to leverage this equipment and program infrastructure to add the San Francisco site with a minimum of additional cost. Sample media and analysis will be purchased using the same statement of work and deliverables used by CADAMP. Sampling field operations will be carried out by BAAQMD air monitoring field staff experienced in CADAMP procedures. With money provided by this grant, approximately sixteen, 24-day sampling moments will be measured and analyzed.
Funding: $65 K
Organization: Bay Area Air Quality Management District
Duration of project: 16 Months

Region 10 (PBT Regional Contact: Pat Springer, 206 553-2858)

FY 1999

R-10.1-99 An EPA/Tribal Partnership Program to Screen for Potential PBT contamination in Alaskan Tribal Subsistence Foods. (Region 10)

This grant, under an EPA/Tribal partnership with the Alaska Native Marine Mammal Commissions, the Alaska Sea Life Center and the EPA Region 10 Manchester Laboratory and the Office of Environmental Assessment, has design and field test a prototype of a PBT screening tool for subsistence foods. Alaskan tribes and scientists have repeatedly voiced concern over potential contamination to native subsistence foods from global long range transport of pollutants, past military practices and 640 military sites in the state. This information will address critical unmet needs for Alaska's tribes to have a safe and cost-effective way to test their subsistence foods for possible contamination.
Funding: $70 K from OPPT

FY 2000

R-10.1-00 Community Exposure to B(a)P and other PBTs from Agricultural Burning:

This proposal will measure air quality impacts near burning agricultural fields and exposure of selected nearby communities. This will be accomplished through multi-state and federal agency cooperative efforts and supports the strategy and activities identified in the draft B(a)P National Action Plan under development.
Funding: $72.8K from OPPT

R-10.2-00 Reducing Emissions from Cereal Grain Burning:

This proposal requests leveraged partial funding for two projects--an emissions study to be used to evaluate the potential for alternative farming and burning practices, and a feasibility study for no-till sowing into irrigated wheat stubble instead of burning. Both of these projects support the strategy and activities contained in the draft B(a)P National Action Plan and would be accomplished through the coordinated efforts of several state and federal agencies.
Funding: $50K from OPPT

FY 2001

R-10.5-01 Quantifying Post-harvest Emissions from Grass Field Burning and Facilitate PBT Research Needs for Agricultural Burning in the Pacific Northwest

This proposal requests funding for two PBT related projects. The first project will characterize emissions from grass field burning which includes pollutants of interest under the PBT program. The emission project is currently under the direction of Washington State University, College of Crops and Soil Sciences. The total project cost is estimated at $125,000. This proposal requests *leveraged partial funding* necessary for the completion of this project. Additional funding is required to accomplish the desired set of tasks. The information gained from this emission study will eventually lead to a reduction in emissions from burning grass seed residues through the development of improved smoke management programs.
Funding: $12.5 K
Organization: Idaho Department of Environmental Quality
Duration of Project: 1 year

FY 2002

R-10.1-02 Alaska Fish Safety Monitoring Program

The State of Alaska is conducting a Fish Safety Monitoring Program which will ultimately evolve into a State Fish Advisory Program. Funding for the Fish Safety Monitoring Program is being shared by Alaska Fish and Game, Alaska's Water Quality grant, and Alaska DEC. However, current funding would allow only 75 fish tissue samples to be analyzed for organic contamination. The PBT funding request is for organic chemical analyses of additional fish tissue samples at the contract laboratories.
Funding: $60 K
Organization: (Alaska DEC)
Duration of project: 1 Year (?)

R-10.4-02 Hospitals for a Healthy Environment (H2E) Implementation and Mercury Thermometer Outreach Campaign

This project will accomplish 2 objectives: 1) Address the lack of H2E participation in Region 10 (R10) by leveraging existing partnerships with the NW Product Stewardship Council, WA Department of Ecology, R10 Tribes and the Medical Industry Waste Prevention Roundtable (MIRT) to increase H2E membership to 50 hospitals. Currently, R10 has only 3 H2E hospitals on board. This does not allow for sufficient emphasis on

the need for mercury reduction in hospitals and medical facilities. 2) Leverage existing partnerships with hospitals for a mercury reduction outreach campaign. Our program will expedite removal of mercury thermometers and educate consumers and hospital clients in the hazards of mercury and alternatives to mercury containing products. We will focus our education/partnership efforts on our at-risk populations including low income, children and tribes.
Funding: $90 K
Organization: Region 10, Office of Waste and Chemicals Management
Duration of project: 1 Year

Proposal being funded under the Pollution Prevention Incentive for States (P2G) Grants Program

Region 2 Funded PBT Project

FY 2001

R-2.1-01 Mercury Manometer Replacement and Outreach Project for Plumbers

The New York State Department of Environmental Conservation's (NYSDEC) Pollution Prevention Unit and Division of Solid & Hazardous Materials propose to conduct a multi-faceted program that will reduce releases of mercury to the environment and mercury exposures. This proposal requests funding for a mercury manometer replacement and outreach project for plumbers. The mercury manometer project will reduce the use of mercury manometers being used by plumbers and aid in their proper disposal by: researching the various New York State local municipality codes to determine if mercury manometers are being required to pressure test gas lines; drafting of a model municipality code that municipalities can use to replace building codes that presently require gas pressure testing be performed only with mercury manometers; educational outreach on the health and environmental effects of mercury to plumbers; providing information to plumbers to promote the use of non-mercury manometers alternatives; and lastly, working directly with gas utility companies to develop take back programs for mercury manometers and with municipalities to collect them during household hazardous waste collection days. This project will provide an opportunity to foster constructive relationships among stakeholders (more than 7 different stakeholders) - those most affected by environmental decisions including representatives from industry, homeowners, trade associations, and government officials. In this manner, a non-adversarial working relationship with all stakeholders will create a productive

environment for achieving the voluntary removal of mercury manometers used by plumbers.
Total Cost: $60 K
Duration of project: 2 years
Organization: NYSDEC

DRAFT Action Plan Summaries

Mercury:

Mercury has long been known to have toxic effects on the nervous systems of humans and wildlife. Although the amount of mercury on Earth has not changed, the amount mobilized and released into the environment has increased since the beginning of the industrial age. Most of the mercury entering the environment is believed to be the result of air emissions. These emissions are transported through the atmosphere and eventually deposit to land and water. However, waste water discharges as well as disposal of mercury containing wastes to land and water also contribute to environmental loadings. Once mercury enters waters it can bioaccumulate in fish and animal tissue in its most toxic form, methylmercury. Bioaccumulation can be millions of times greater than the concentrations of mercury found in the water. Predatory species and people who consume substantial large amounts of contaminated fish may be at the highest risk of adverse effects of methylmercury such as the nervous system. Fetuses exposed to methylmercury through their mother's dietary consumption of fish are particularly at risk of adverse effects because the developing nervous system is more vulnerable to mercury toxicity.

Mercury is the most frequently listed substance for fish advisories. As of December 1999, 41 States have issued a total of 2,073 fish advisories for mercury. Eleven of those States have issued advisories for all water bodies in their State, and another six States have statewide advisories for mercury in their coastal waters.

Key Actions:

The following activities are considered current priorities under short-term goals:

- Reduce/eliminate anthropogenic release of mercury.
- Reduce exposure to mercury immediately, by improving risk communication.
- Reduce uses of mercury.
- Ensure safe storage and disposal of mercury wastes and non-waste elemental mercury.
- Investigate life-cycle issues associated with mercury as a global commodity.

Dioxin:

Dioxins are a family of toxic substances that scientists call polychlorinated dibenzo-para-dioxins. Closely related to dioxins are a family of substances known as polychlorinated dibenzofurans (furans). Furans are often present with dioxins. Dioxins and furans have similar structures which allow substitution of one to eight chlorine atoms in a variety of combinations,

yielding a total of 75 distinct dioxins and 135 different furans. Of these, 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) is the most toxic and is used as the benchmark for calculating the toxicity of the other dioxins and furans.

Since dioxin-like compounds are often found in complex mixtures, the toxicity of a mixture is often expressed in terms of toxic equivalency (TEQ). Calculating the TEQ of a mixture involves multiplying the concentration of individual congeners by their respective toxicity equivalency factors (TEF) and summing the results to obtain the TEQ. The TEF provides an assessment of each congener's toxicity relative to 2,3,7,8-TCDD.

Dioxins and furans have become ubiquitous in the environment, principally due to anthropogenic activities. They are generally associated with sediment and organic matter due to their low water solubility and high lipophilicity. Dioxins and furans do not move appreciably in soil. Aquatic sediments are considered the "ultimate sink" of all dioxin and furan releases. Wet and dry deposition and long range transport through the atmosphere have been demonstrated. Dioxins and furans are generally resistant to biodegradation but may be degraded by reaction with hydroxyl radicals and direct photolysis in the air. Dioxins and furans have been shown to accumulate in biological tissues (especially tissues with high lipid content) where they are slowly metabolized and therefore persist in tissues for considerable lengths of time.

Humans are exposed to dioxins and furans through air emissions, water, food, and soil. Diet is currently considered to be the main exposure pathway for dioxins and furans, particularly contaminated fish, meat and dairy products. Elevated concentrations have been the cause of fish consumption advisories in many water bodies. Dioxins and furans may also be transferred to food crops. Dioxins and furans are fat soluble and will accumulate in the bodies of humans and animals. Possible short-term health effects include liver damage, skin conditions, weight loss, altered metabolism, atrophy of the thymus gland and immune suppression. Long-term health effects can include reduced fertility, increased miscarriages, abnormal fetal development, developmental delays in children, low birth weights, and increased risk of endometriosis. Dioxins and furans are also suspected carcinogens.

Key Actions:

OPPTS will focus on updating and refining the source inventory, field measurement of Dioxins/Furans and selected key actions that will be defined in FY 2002 through the development of the Action Plan.

Polychlorinated biphenyls (PCBs):

Polychlorinated biphenyls (PCBs) are a group of synthetic organic chemicals which were manufactured in large quantities in the United States from 1929 through 1977. They were widely used as coolants and lubricants in transformers, capacitors, and other electrical equipment, as heat-resistant hydraulic fluids, and as heat-conducting fluids in heat exchangers. They were also used in a variety of consumer products, ranging from fluorescent lighting fixtures and small capacitors in appliances (e.g., microwaves), to microscope oil, ink, caulking compounds, carbonless copy paper, plastics and plasticizers, paints, adhesives, flame retardants, and pesticide carriers.

By 1978, the manufacture of PCBs was effectively banned. Today, the use of PCBs in new transformers in the United States is banned, and their use in existing transformers and capacitors is being phased out as in-use equipment is replaced or decontaminated according to TSCA regulations. In addition to intentional commercial production, PCBs can be inadvertently generated as a byproduct of certain combustion practices. The Action Plan also intended to reduce both the non-coplanar and coplanar dioxin-like PCBs. However, due to their many similarities to dioxins and furans, the dioxin-like coplanar PCBs are also being addressed in the Dioxin Reassessment, and additional actions beyond those identified in this Plan will be included in EPA's Cross-Media Dioxin Strategy.

PCBs have been linked to several adverse health effects in humans. These potential health consequences can be of particular concern in certain highly exposed or sensitive populations. Health effects include: 1) reproductive function; 2) neurobehavioral and developmental deficits occur in newborns and continue through school-aged children who had in utero exposure to PCBs; 3) other systemic effects (e.g., self-reported liver disease and diabetes, and effects on the thyroid and immune systems) are associated with elevated serum levels of PCBs; and 4) increased cancer risks, e.g., non-Hodgkin's lymphoma, are associated with PCB exposures. Short-term exposure may include: acne-like eruptions (chloracne); pigmentation of the skin; nose and lung irritation; numbness of limbs; and weakness. Effects of long-term exposure may include: chloracne; chronic bronchitis; change in liver function; irritation of the nose, throat and gastrointestinal tract; birth defects; fertility problems; low birth weight; and nervous system impairment in newborns. Disruption of the endocrine system, which functions to regulate a wide range of biological processes, including control of blood sugar, growth and function of reproductive systems, regulation of metabolism, brain and nervous system development, and development of an organism from conception through adulthood and old age, is also a key health concern associated with PCBs that is at least in part due to non-dioxin-like effects of PCBs

Key Actions:

Since the Agency has a mature regulatory program which addresses PCBs, the primary approach outlined in this action plan will focus on:

1. enforcement and compliance assistance;
2. State, Tribal, other Federal agency, and international coordination; and
3. the promotion of voluntary efforts: (1) to accelerate the removal and safe disposal of PCBs (e.g. via expansion of BNS voluntary programs), and (2) to obtain exposure reductions (e.g. through fish advisories and outreach)
4. Research and non-point sources will also be addressed on a priority basis.

Key / Target Sectors:

Electric utilities, energy intensive industries (e.g., steel/metals), the automotive industry, Federal facilities, and Indian Nations.

Significant Issues

1. Methods of disposal. This includes stakeholder concerns about incineration of PCBs and alternative methods of disposal other than incineration.
2. Agreements with other Federal Agencies on voluntary PCB phasedown programs.
3. Coordination with cross-cutting programs such as RCRA waste management, Superfund, sediments, and long-range transport.
4. Methods for measuring progress.
5. Implementation issues, including resource commitments.

Pesticides: (aldrin/dieldrin, chlordane, DDT, mirex and toxaphene)

Aldrin, dieldrin, chlordane, DDT, mirex, and toxaphene are all highly chlorinated, persistent organic pesticides that were once widely used in large quantities in the United States. They were used for a variety of applications, including: insect control on agricultural crops and cotton, treatment of livestock, control of ants, termite control in houses, and control of insect carriers of human diseases such as malaria. Because of evidence supporting the adverse environmental and human health effects of these substances, including their probable carcinogenicity, the pesticide uses of all of the Level 1 pesticides were canceled in the U.S. in the 1970's and 80's. In general, the remaining sources of Level 1 pesticides in the United States include:

- unused stocks of these canceled pesticides;
- contaminated reservoirs such as sediments, soil, and localized contaminated industrial and dealership sites;
- atmospheric transport and deposition (from both regional and international sources); and
- DDT present as an impurity (<0.1%) in Dicofol, a pesticide currently used in the U.S. and Canada. (Despite the presence of DDT as an impurity in Dicofol, current Dicofol usage data indicate that DDT releases to the environment from this source are likely to be small.)

Human exposure to the Level 1 pesticides occurs mainly through the food chain, and for the most exposed populations, is probably due to the consumption of contaminated fish. Potential risk and health consequences due to the Level 1 pesticides are of particular concern for certain human populations who have increased exposure (e.g., subsistence fishers) and/or increased susceptibility (e.g., the developing embryo/fetus, nursing infants, and children).

The Agency's programmatic baseline for reducing risk of exposure to the Level 1 pesticides has historically focused on the control of product manufacture and use. In the U.S., the manufacture and distribution of all the Level 1 pesticides has been prohibited, registered pesticide uses have been canceled, and food tolerances revoked. Voluntary pesticides collection programs, which are primarily maintained by states and other non-EPA entities to collect unused stocks of

waste pesticides, are also currently important mechanisms for reducing potential risk associated with the Level 1 pesticides.

Although uses of the Level 1 pesticides have been canceled, production facilities have been closed, and intentional releases have been effectively controlled, current research indicates that human and ecological health risk still exists from exposure to Level 1 pesticides. Data gathered in current multi-media monitoring efforts provide substantial evidence that the Level 1 pesticides are still ubiquitous in the environment, and at concentrations that may be of concern for both humans and wildlife. In addition, available information suggests that significant quantities of unused, obsolete pesticide stocks may be stored throughout the U.S. and overseas, which would have the potential to cause serious environmental contamination and human health risk if they were accidentally released or not disposed of properly.

Key Actions:

1. Preventing accidental releases by facilitating, encouraging, and supporting programs to collect and properly dispose of unwanted pesticides;

2. Facilitating, to the extent possible, the remediation or containment of non-point and reservoir sources including sediments, contaminated industrial sites, agricultural chemical dealer/storage sites, and past use sites on a priority basis.

3. Reducing human exposure through public education, fish advisories, and other outreach;

4. Working internationally to reduce or phase-out production and use of these substances, and to encourage environmentally sound management, disposal and/or destruction of stockpiles of these chemicals in other countries, with the goal of elimination of the risks from long-range transport; and

5. Continued monitoring of the Level 1 pesticides in all relevant environmental media, fish and wildlife, and humans with the goal to provide information regarding continued and emerging problems and to serve as the basis for measuring progress.

Agency activities to support States, Tribes, and local governments in their pesticide collection programs will include continuing to supply technical assistance, helping to resolve regulatory issues and barriers, helping identify options for financing Clean Sweep programs, supporting program outreach, and facilitating the collection of pesticides from households and urban businesses.

The Agency's specific strategy for addressing reservoir sources and for monitoring environmental pollutants will not be limited to a focus only on the Level 1 pesticides. Rather, it will be part of broader Agency and other federal efforts, including: the Agency-wide contaminated sediment management strategy, the Agency's Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and Resource Conservation and Recovery Act (RCRA) programs, ongoing monitoring efforts, and Agency research on the sources and pathways of human exposure to toxic pollutants.

Recognizing that the consumption of contaminated fish is currently considered a primary route of human exposure, the Agency will continue to promote exposure reduction through public outreach with a focus on fish consumption advisories. This will include: working with state, federal, and tribal agencies to ensure adoption of consistent methods for developing and communicating fish consumption advisories, working with the Agency for Toxic Substances and Disease Registry on the development of outreach materials, and maintaining the National Listing of Fish and Wildlife Advisories.

The Agency will also continue to work on and coordinate with multiple international efforts including: 1) the United Nations Environment Programme Prior Informed Consent Procedure, Obsolete Pesticides Program, and Global Persistent Organic Pollutants treaty; 2) the United Nations Economic Commission for Europe Convention on Long-Range Transboundary

Air Pollution (LRTAP); 3) the North American Commission for Environmental Cooperation Sound Management of Chemicals Program, and Regional Action Plans for Chlordane and DDT; 4) the North American Free Trade Agreement Technical Working Group on Pesticides; and 5) the World Health Organization's DDT phase-out activities as part of the Rollback Malaria Program; and 6) the Great Lakes Binational Toxics Strategy.

Alkyl-lead:

Alkyl-lead compounds are man-made compounds in which a carbon atom of one or more organic molecules is bound to a lead atom. Tetraethyllead [TEL] and Tetramethyllead [TML] compounds are the most common alkyl-lead compounds that have been used in the past and are still in use today in the United States. These two alkyl-lead compounds are the focus of this National Action Plan. Alkyl-lead is used as a fuel additive to reduce "knock" in combustion engines and also to help lubricate internal engine components and protect intake and exhaust valves against recession. Currently, the largest uses of alkyl-lead are in aviation gasoline for general aviation (piston-engine) aircraft, and racing gasoline. Neither of these uses are subject to any of the regulations that restrict leaded motor gasoline use.

Alkyl-lead is released to the environment primarily through evaporative emissions from unburned gasoline retained in an engine's carburetor or fuel tanks and through evaporative losses during the filling of gasoline tanks, accidental spillages, and releases during production. Typically, only a very small percentage of alkyl-lead is exhausted uncombusted when driving at constant speeds. However, alkyl-lead compounds combine with other compounds during the combustion process to form lead halides that are subsequently emitted as microparticulates in the exhaust. Once emitted, lead particles may remain airborne for about 10 days and may be transported far from the original source. Lead is removed from the atmosphere and deposited on soil and water surfaces via wet or dry deposition. Alkyl-lead itself is not a persistent environmental compound but breaks down in the environment (or is emitted following combustion) to other forms of lead which are much more persistent.

In the body, alkyl-lead compounds are distributed through the blood to "soft tissues" particularly the liver, kidneys, muscles, and brain. Initial symptoms of alkyl-lead poisoning include, among others: anorexia, insomnia, tremor, weakness, fatigue, nausea and vomiting, mood shifts such as aggression or depression, and impairment of memory. In the case of acute alkyl-lead poisoning, possible health effects include mania, convulsions, delirium, fever, coma, and in some cases even death. Lead poisoning due to the ingestion or inhalation of inorganic lead compounds emitted as exhaust through the combustion process (as a direct result of the use of alkyl-lead in gasoline) is a widely recognized public health problem.

With the phase-out of leaded gasoline used in on-road vehicles in the United States, there has been a substantial reduction in the risk of exposure for the general public. As a result of the

1990 Clean Air Act Amendments, the sale or use of gasoline containing alkyl-lead (greater than 0.05 grams of lead per gallon) is currently prohibited in on-road vehicles. However, the remaining uses of gasoline containing alkyl-lead, particularly for race cars and airplanes, potentially puts certain subpopulations at risk. These subpopulations include residents (particularly children) near sources such as race tracks and general aviation airports, fuel attendants, racing crew staff, and spectators. EPA does not have the authority under the CAA to regulate the use of unleaded gasoline for the racing industry, and the regulation of aircraft fuel lies with the FAA. However, NASCAR is evaluating and testing the use of unleaded racing gasoline (e.g., in the Busch Grand Nationals series). The FAA, working cooperatively with the Coordinating Research Council, has initiated an Unleaded Fuels Research Program to complete research on the development of unleaded aviation gasoline for civil aircraft.

On a global basis, lead in gasoline has been estimated to contribute 95 percent of the lead air pollution found in the world's major cities. Aided by U.S. efforts to promote the phase-out of leaded gasoline use in motor vehicles worldwide, several foreign countries have totally phased out the use of lead in gasoline while others have lowered the levels of lead added to leaded gasoline.

Recognizing the large reduction in lead emissions related to the use of alkyl-lead, primarily due to the regulated phase-out of leaded gasoline in on-road vehicles, the Agency has adopted the following strategic approach to address the remaining risks to human health and the environment from exposure to alkyl-lead: 1) contribute to international efforts to reduce the use of alkyl-lead worldwide, 2) pursue voluntary initiatives to reduce the use of alkyl-lead in aircraft gasoline, race cars, and non-road vehicles such as farm machinery, marine vessels, construction equipment, and recreational vehicles, and 3) collect information as possible, given resource constraints, related to production, use, emissions, and continued exposure scenarios.

Key Actions:

- Continue current international efforts to reduce the use of leaded gasoline, including participation in the United Nations Commission on Sustainable Development, Summit of the Americas, Earth Summit + 5, the G-8, and the Great Lakes Binational Toxics Strategy.

- Coordinate with NASCAR and NASCAR Sponsors to encourage a voluntary unleaded phase-in partnership/program to eliminate the use of leaded gasoline in the auto racing industry.

- Establish a dialogue with the Federal Aviation Administration to discuss the use of leaded gasoline in the aviation industry and the possibilities of reducing the lead content and/or replacing leaded gasoline with unleaded. Similar discussions will be established with the Coordinating Research Council task force investigating alternative (no-lead) gasoline for aircraft.

Hexachlorobenzene (HCB):

HCB is a highly persistent environmental toxin that was synthesized and used from the 1940s to the late 1970s as a fungicide on grain seeds such as wheat. In the U.S., the last registered use as a pesticide was voluntarily canceled in 1984. HCB is no longer commercially produced in the U.S. However, HCB is currently formed as an inadvertent by-product in the production of silicone products, metal cans (surface coating), pesticides, chlorine, and in other chlorination processes. HCB is released from publicly owned treatment works, commercial refuse systems, and petroleum refineries. The use of chlorinated organic compounds in the production of microchips by aluminum plasma etching is also known to generate HCB wastes. Long-range atmospheric transport and deposition from global sources are also thought to contribute to loadings within the U.S.

HCB is considered a probable human carcinogen and is toxic by all routes of exposure. The general population appears to be exposed to very low concentrations of HCB, primarily through ingestion of meat, dairy products, poultry, and fish. Ingestion of HCB-contaminated fish is potentially the most significant source of exposure. HCB bioaccumulates in fish, marine animals, birds, lichens, and their predators. HCB has been found in fish and wildlife throughout the U.S., though the Great Lakes and Gulf coast are areas of particularly high contamination. Native populations who consume locally caught fish and game species may be particularly susceptible to high levels of HCB exposure.

As a persistent, bioaccumulative, and toxic substance, HCB is included in Binational Toxics Strategy efforts to virtually eliminate such substances from the Great Lakes Basin. HCB is also measured or reported in a number of monitoring programs in the U.S., such as TRI, the National Study of Chemical Residues in Fish, NHANES, and NOAA's Mussel Watch Project. As a global pollutant of concern, HCB is listed in several international initiatives to reduce or control its release.

While current sources of HCB release have been identified, there remain information gaps related to the magnitude of known and suspected sources of HCB, the extent of pollution resulting from long-range transport, and the content of HCB in sinks such as sediments and POTW sludge that may contribute to environmental cycling within U.S. boundaries. The strategic approach of the Agency therefore will involve voluntary initiatives to effect reductions and minimize media transfers, information collection to verify sources and sinks, and increased involvement and assistance with international groups and other countries to reduce atmospheric deposition in the U.S.

Key Actions:

1. Identify and implement voluntary initiatives and outreach opportunities, while minimizing multi-media transfers through: a) Source Reduction Techniques; b) Industry Partnerships; c) Outreach/Education; and d) POTW Pollution Prevention Programs.

2. Continue to collect information and integrate data across media regarding sources, sinks, releases, environmental trends, food and body burden levels. Key areas include: a) Identify local or regional hot spots (IADN, National Study of Chemical Residues in Fish, NHANES, NOAA Mussel Watch); b) Review current lists and existing data; c) Quantify reductions achieved through MACT standards promulgated for other substances; and d) Research potential for HCB contamination in consumer products.

3. Work with international organizations to assess the significance of long-range transport from other countries and to foster the proliferation of P2 or control technology measures. Key actions include: a) Continue current international efforts (BNS, CEC/SMOC, LRTAP, UNEP, AMAP); and b) Assess the significance of long range transport from other countries and identify countries with opportunities to reduce HCB emissions

Benzo(a)pyrene (B(a)P):

B(a)P is a member of a class of compounds known as polycyclic aromatic hydrocarbons (PAHs) which generally occur as complex mixtures and not as single compounds. Thus, B(a)P emissions are not typically reported in emissions inventories alone but more often with a class of PAHs. In particular, B(a)P is classified in a subset of seven PAHs of similar molecular weight that have been identified as animal carcinogens by the International Agency for Research on Cancer (IARC) and as probable human carcinogens by the EPA. Although this action plan focuses on the Level 1 pollutant B(a)P, specific actions and sectors may be prioritized, in part, on the basis of their ability to reduce risk from the group of seven PAHs (hereafter referred to simply as PAHs unless otherwise noted). The seven PAHs comprising this subset are of similar molecular structure and are primarily found on particles in air emissions:

Benz(a)anthracene	Benzo(a)pyrene
Chrysene	Dibenz(a,h)anthracene
Benzo(b)fluoranthene	Indeno(1,2,3-cd)pyrene
Benzo(k)fluoranthene	

PAHs are primarily by-products of incomplete combustion. According to EPA's 1996 National Toxics Inventory, the largest sources of 7 PAH air emissions are forest and wildfires, prescribed burnings, and agricultural field burning (70%), residential wood combustion (10%),

primary aluminum production (7%), mobile sources (6%), open burning of scrap tires (3%), and wood kitchen cabinet manufacture (2%). Additional sources include petroleum refineries, publicly owned treatment works, ferroalloys production, iron and steel manufacturing (including coke ovens), medical waste incinerators, municipal waste combustors, meat charbroilers, and open trash burning. PAHs are also capable of undergoing long range transport, as vapor and particulate-phase material, although the contribution from long range sources is not known.

Human exposure to PAHs occurs mainly through inhalation of air contaminated by cigarette and other tobacco smoke and through the consumption of foods, especially meats and fish that are smoked or charcoal-broiled. Exposure to PAHs may also occur in road sealing and roofing work involving coal tar and asphalt, in areas where high-temperature food fryers and broilers are in use, in homes that use wood fireplaces, wood-stoves, or coal or oil furnaces, and where workers, vehicle occupants, or pedestrians are exposed to gasoline and diesel engine exhaust. Occupational exposures can also occur at workplaces such as coking plants, asphalt and aluminum production plants, or facilities that burn wood, coal, or oil.

The strategic approach of this action plan will focus largely on pollution prevention measures and voluntary initiatives with the Regions, States, and Tribes to reduce emissions from combustion sources. The Agency has determined that the majority of 7-PAH emissions result from area combustion sources. However, a large proportion of human exposures may be due to residential sources. Several source categories that emit PAHs are affected by ongoing Agency air toxics programs. For example, maximum achievable control technology (MACT) standards are being developed that are likely to result in PAH emissions reductions from several of these source categories. Moreover, the Agency supports opportunities for concomitant reduction of multiple pollutants, including PAHs, through MACT and other programs. Further regulatory actions will be considered as appropriate. Contaminated sediments and control of long-range transport will be addressed through current ongoing Agency efforts. Research to better characterize the relationship between emission sources and current exposure and risk will also be a high priority. PAH levels in the environment will be monitored to provide a better understanding of exposure levels, prioritize actions in selected areas, and measure progress in reducing exposures. Finally, EPA acknowledges the need to minimize cross-chemical transfers (i.e., to maximize the destruction/removal of one PBT while also minimizing the production of others). Thus, actions to reduce PAH emissions will be considered for their effect on emissions of other PBT pollutants, such as chlorinated dibenzodioxins.

Key Actions:

1. Reducing PAH emissions from residential wood and coal combustion. Currently, the Agency (through Region 5) is involved with a wood-stove change-out program that includes consumer outreach and education.

2. Open Burning of Scrap Tires. Scrap tire management policies and consumer outreach/education

3. Exposure and Risks. Evaluate and research relationship between emission sources and current exposures and risks.

4. Open Burning and Small Industrial Boilers Burning Fossil Fuels. Research the magnitude of PAH emissions from these sources and technologies to improve emissions. The PBT Program has already funded several projects that focus on these two issues.

Octachlorostyrene:

OCS is primarily of concern due to its persistence and bioaccumulation in the environment, and its toxicity to aquatic organisms. Little is known about its potential human toxicological effects. OCS is not commercially manufactured but has been reported to be an inadvertent byproduct of processes that combine carbon and chlorine at high temperatures. Some of these processes include magnesium production, commercial production of chlorinated solvents, aluminum plasma etching (used in producing microelectronic components), aluminum degassing with hexachloroethane, chlorination of titanium and niobium/tantalum ores, waste incineration, and chlor-alkali production with graphite anodes. Limited data on the occurrence of OCS in the environment indicate that OCS has been released, in the past, from sources along the St. Clair and Niagara Rivers, Lake Erie, the Gulf coast of Texas, and southern Louisiana. Current monitoring of OCS levels in herring gull eggs collected from Great Lakes colonies indicates levels of OCS are declining in the Great Lakes.

Because of the limited data on sources and levels of emissions of OCS, combined with the fact that what information EPA does have suggests that levels in the environment are low and generally declining, the strategic approach of the action plan is to develop a better understanding of OCS sources, releases, and potential for exposure, and to promote voluntary pollution prevention efforts where appropriate.

Key Actions:

1. Monitoring OCS levels in the environment through the National Study of Chemical Residues in Fish, sediment analyses, Integrated Atmospheric Deposition Network ambient air monitoring, and evaluation of data collected from various other monitoring efforts and EPA reporting systems.

2. Working with industry to evaluate potential sources of OCS and sharing information with states, EPA Regional offices, Tribes, and other stakeholders regarding processes reported to generate OCS.

3. Investigating the nature of the relationship between OCS and other chlorinated compounds such as hexachlorobenzene and dioxins/furans, so that EPA may identify more efficient ways of reducing multiple PBTs.

General Compliance and Enforcement Activities:

Supplemental Environmental Projects (SEPs) Language for PBT National Action Plans:

The Agency will explore applying Supplemental Environmental Projects (SEPs) more broadly across all Agency programs to further reduce the emission and/or releases of high priority Persistent Bioaccumulative and Toxic (PBT) chemicals from entering into the environment. As part of specific enforcement actions, the Agency will encourage the inclusion of Supplemental Environmental Projects (SEPs). A SEP is an environmentally beneficial project which a defendant agrees to undertake as part of a settlement, but which the defendant is not otherwise legally required to perform. This may include cleaning up a damaged area beyond the regulatory requirements or providing some additional protection not required by regulation or statute. A defendant's willingness or ability to perform a SEP is considered as a factor in establishing the final penalty paid by the defendant. EPA particularly encourages SEPs in communities where there are environmental justice concerns, to help ensure that persons who spend significant portions of their time in areas, or depend on food and water sources located near where violations have occurred, are protected. Offices that will be involved in information and coordination activities include: Regions, the Office of Air and Radiation, the Office of Solid Waste, the Office of Water and the Office of Enforcement and Compliance Assurance.

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